

# Green Infrastructure Grant Program for the Combined Sewer Area Education Signage Guidelines

For questions, contact:

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## Introduction

The Northeast Ohio Regional Sewer District is committed to ensuring that all funded construction projects include robust public education and outreach through permanent signage. This document outlines the minimum signage requirements for projects funded through the GI Grant Program.

### 1. Responsibilities

- **Grantee Responsibility:** The grantee is responsible for the design, fabrications, installation, maintenance, and, if needed, replacement of the educational signage for the full design life of the project.
- **District Support:** The District will provide minimum signage criteria for applicable green infrastructure (GI) practices.
- **District Rights:** The District retains the right to photograph any funded project for outreach and educational purposes.

### 2. Coordination And Approval

- Upon substantial project completion, grantees must coordinate signage content and placement with the District.
- Grantees are required to submit customized signage proposals for approval.
- All signage must be installed within 30 days of substantial project completion.

### 3. Fabrication, Installation, And Maintenance

- Signage must explicitly reference the GI components of the project.
- All signage must include the official Northeast Ohio Regional Sewer District logo – See below.
- Signage designs must be submitted to the District for approval prior to fabrication.

### 4. Eligible Expenses

- The cost to design, fabricate, and install **1 permanent signage** is an eligible expense that can be included within your grant request.

### 5. Required Acknowledgment

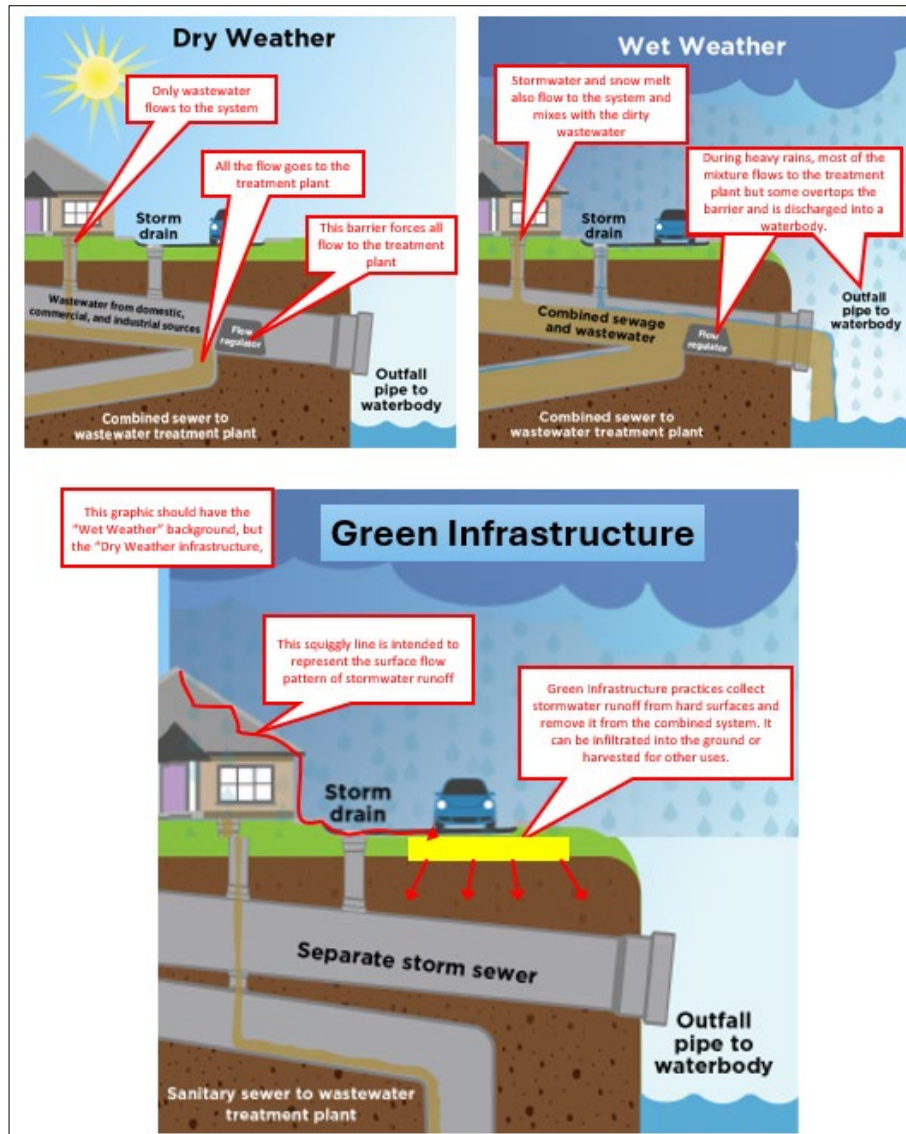
- The following acknowledgement **MUST** be included on all educational signage.

“This project was made possible through funding from the Northeast Ohio Regional Sewer District Green Infrastructure Grant Program.”

## 6. Required Education Content

- **What are Combined Sewers?** Cities like Cleveland use combined pipes to carry both sewage and stormwater to treat plants. During heavy rainfall, these systems can overflow, discharging untreated wastewater into local waterways, including Lake Erie.
- **What is Green Infrastructure?** Green Infrastructure uses natural or engineered systems—such as wetlands, bioretention basins, and permeable pavement—to manage stormwater at its source. These practices help absorb rainwater, reduce runoffs, and prevent sewer overflows and pollution.

Figure 1: Below is an example Illustration of a Combined Sewer System and Green Infrastructure between GI features (e.g., bioswales, green roofs), and overflow mitigation pathways.



## 7. Specifications and Measurements

- Minimum Dimensions

Feature	Specification
Height	Minimum 36 in. above ground
Panel Size	24 in. x 36 in. (2 ft. x 3 ft.)

### a. Size and Visibility

- Minimum specs include a height above ground of approximately 3 feet (36 in).
- Panel dimensions of 2 feet x 3 feet (24 in x 36 in).
- The signage should be clearly visible from the intended viewing distance.
- The size of the signage should be appropriate for the viewing distance and the amount of information to be displayed.

### b. Fonts and Text

- Fonts should be legible and easy to read.
- The size of the text should be large enough to be readable from the intended distance.
- Use a font color that provides good contrast with the background color to enhance legibility.

### c. Colors and Contrast

- Select colors that are visually appealing and attention-grabbing.
- Ensure there is sufficient contrast between the background color and the text or images.
- Consider color combinations that comply with accessibility guidelines, such as those for individuals with color blindness.

### d. Material and Durability

- Choose materials that are durable and suitable for the signage's intended outdoor location.
- Outdoor signage should be weather-resistant and able to withstand environmental factors like rain, sunlight, and temperature changes.

### e. Mounting and Installation

- Determine the appropriate mounting method based on the signage type (e.g., wall-mounted, freestanding, hanging, single post, double post).
- Consider factors like height, angle, and location to ensure optimal visibility and accessibility.
- Customized signage is highly recommended.

### f. Regulatory Compliance

- Adhere to local regulations and standards regarding signage size, placement, and content.
- Consider accessibility guidelines to ensure signage is readable and usable by people with disabilities.

### g. Branding Guidelines

- Grantees are encouraged to develop signage that reflects their project's unique community and environmental goals.
- Sample signage designs are available on the following pages to guide the creation of customized educational signs.
- All educational signs must incorporate the current Northeast Ohio Regional Sewer District logo.
- Logos can be downloaded from [www.neorsd.org/branding](http://www.neorsd.org/branding) or requested from the District.

## NORTHEAST OHIO REGIONAL SEWER DISTRICT EDUCATION SIGNAGE EXAMPLE



**WIRTH HOUSE**  
This was the site of the former Wirth House, which was built around 1885. Wirth served as the last postmaster of Broadview Village, also known as Broadview Center, before its incorporation into the City of Cleveland in 1898. Meanwhile, the house was prepared to be sold to a new owner, the former House, located at 2678 West 15th Street. The former House, built in 1875, is believed to be the oldest existing house in Cleveland's Clark-Fisher neighborhood.

This historical marker for the Wirth House and the local history of Broadview Center is a significant historic Broadview Center site. The site is located on the west side of the Cleveland River, the intersection of Broadview Village, which incorporated Broadview Center, in the City of Cleveland marked for the end of the independence of this small but central piece of local history.

**1990 ART HOUSE'S MISSION IS TO INSPIRE EXPLORATION AND EXPRESSION THROUGH THE VISUAL ARTS.**  
The House, Inc. has recently been awarded in 1990 to local artists and visitors. This organization is dedicated to the belief that the arts enrich lives and help create stronger communities. Art House has been making an excellent record of all ages through high-quality, fun, and low-cost visual arts and programs. Through its mission, Art House encourages the center of local artists and, by extension, contributes to the fabric of Cleveland's thriving arts scene.

### ART HOUSE, INC. GREEN INFRASTRUCTURE GARDEN

**FEATURES OF A BIORETENTION BASIN**



**WHY IS GREEN INFRASTRUCTURE IMPORTANT?**  
Green infrastructure is a range of stormwater control measures that use planted systems, permeable pavements, or stormwater harvesting to capture, store, and treat stormwater runoff. This project demonstrates how Green Infrastructure stormwater control measures like bioretention and permeable pavement might be incorporated into other public and private properties to better manage stormwater runoff. Permeable pavement systems consist of a permeable pavement surface layer and one or more underlying gravel layers designed to temporarily store and infiltrate stormwater.

**WHAT IS BIORETENTION?**  
Bioretention areas are stormwater catch or basins that use soil, mulch, and vegetation as a natural filtration device to remove pollutants and nutrients from stormwater runoff. This bioretention area improves water quality by allowing bioretention soil which is a specialized planting soil with a higher sand content that supports infiltration.

**THE BIORETENTION PROCESS**

1. Clean stormwater runoff through soil filtration.
2. Infiltrate stormwater runoff into the soil.
3. Reduce the amount of runoff into combined storm sewers and Lake Erie.

**SITE PLAN**

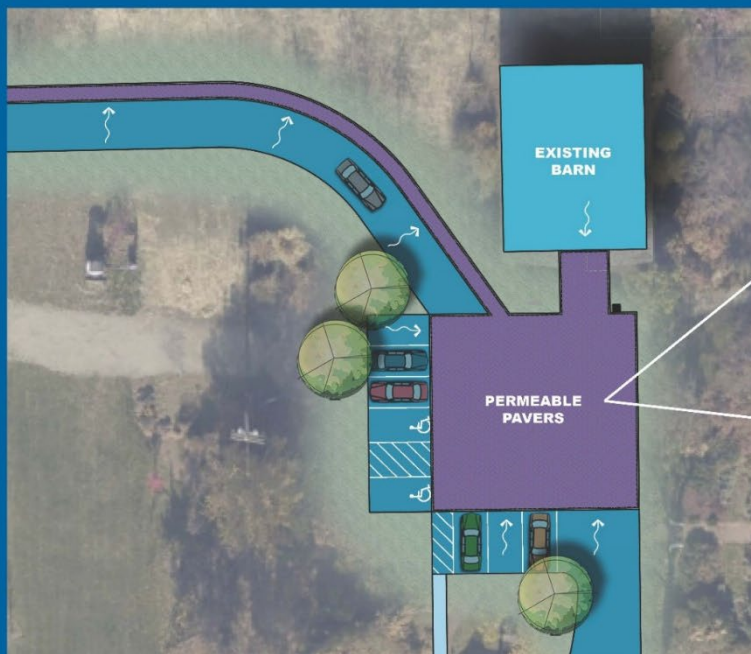


**CAN YOU IDENTIFY THESE PLANTS THAT ARE IN THE BIORETENTION AREA?**



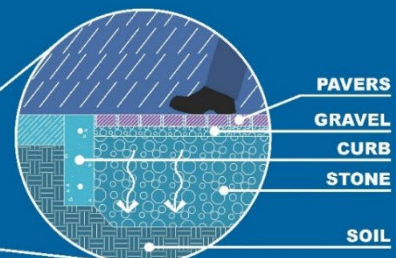
**Logos:** Northeast Ohio Regional Sewer District, DERU, BIG CREEK CONNECTS, AECOM, WEST CREEK.

## PERMEABLE PAVERS KEEPING OUR GREAT LAKE GREAT



This project was funded by The Northeast Ohio Regional Sewer District Green Infrastructure Grant Program. The purpose of the project is to remove stormwater from the combined sewer system.

**PERMEABLE PAVERS** are more than just surfaces for plazas and parking lots; they also help the environment! Right now, you are standing on a complex stormwater management system consisting of the pavers you see, followed by layers of gravel, stone, and eventually the soil below. Together, this system protects Lake Erie by allowing stormwater runoff to infiltrate through the surface to the ground below rather than having it flow into our sewers.



**RESEARCH SHOWS** that permeable pavers help remove pollutants from surface runoff. The underlying gravel captures excess nutrients, like phosphorus and nitrogen, as well as heavy metals (zinc or copper) and oils. Then, the filter stone traps these pollutants, which microorganisms break down as the water filters through.



# MENLO PARK ACADEMY NATURE LAB

How stormwater management at our school works to protect Lake Erie

## WHAT IS GREEN INFRASTRUCTURE?

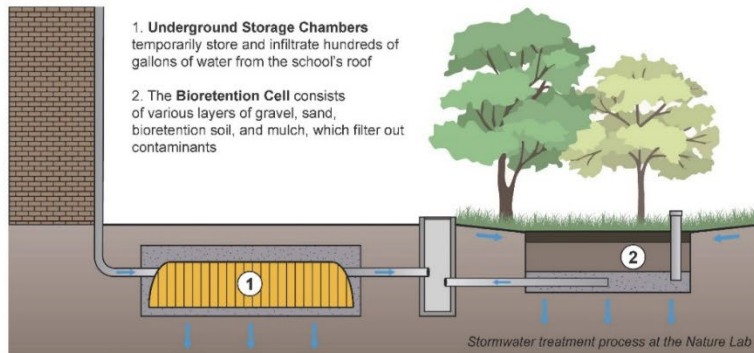
Stormwater runoff is a major source of water pollution in urban areas. Historically, cities have used infrastructure like pipes and gutters to collect stormwater runoff and move it to treatment facilities through combined pipes (pipes that carry both sewage and rainwater). Sometimes, rainstorms produce more runoff than the pipes can hold. So what happens next?! The overflow, a combination of untreated stormwater and sewage from the "combined" pipes, is released directly into Lake Erie! Yikes!

Green Infrastructure is a different approach to stormwater management that collects, absorbs, and filters stormwater where it falls. Green Infrastructure can be natural or man-made and includes elements such as wetlands, cisterns, soils, permeable pavement, infiltration basins, and more. These elements mimic, protect, and restore the natural water cycle. They are designed to allow rainwater to percolate through the soil, reducing the amount of runoff in the sewer system, which in turn reduces overflows and pollution.

## GREEN INFRASTRUCTURE AT MENLO PARK: THE NATURE LAB!

The Nature Lab, generously funded through the Northeast Ohio Regional Sewer District's Green Infrastructure Grant Program, will be used to foster hands-on connections between learning and nature. A bioretention cell collects surface runoff and facilitates stormwater percolation into and through the soils below our feet, and 100% of the rainwater runoff from the school's rooftop is diverted into underground chambers for infiltration.

As stormwater slowly moves through the soil (instead of into pipes), our school is helping to restore the natural hydrologic functions of our regional watershed. By keeping Menlo Park's stormwater out of the combined sewer system, we are helping reduce the risk of overflows and pollution within our community!



# CAPTURING STORMWATER AND SLOWING TRAFFIC IN THE MORELAND NEIGHBORHOOD

This innovative project was inspired by active residents who sought to slow traffic and sustainably beautify the Moreland Neighborhood. Traffic calming bump-outs are formed, in part, by creating a series of environmentally friendly bioretention basins. Together they narrow the roadway to slow vehicular traffic and collect and clean stormwater runoff. The environment is improved by reduced pavement and increased landscaping and safety is enhanced by slower moving vehicles.

## What is Green Infrastructure?

Green infrastructure filters and absorbs stormwater where it falls, reducing flow into sewer systems and reducing water pollution. Three green infrastructure bioretention basins have been installed in the Moreland neighborhood. These basins help developed areas act more like natural areas, mimicking nature's processes which soak stormwater into the ground and filter it with soil and vegetation. This reduces the amount of stormwater that enters the combined sewers, reducing stress on the sewer system, and decreasing sewer backups and pollution. This helps protect our streams and Lake Erie.

## Native Plantings

Native plants play a major role and are well adapted to green infrastructure areas. These plants have evolved and adapted to a particular region's climate, soil, and water needs. Their fibrous root systems anchor the soil, slow down water flow, and increase infiltration. They help remove pollutants, and many are significant habitat and food sources for our local pollinator insects and butterflies.

## Infiltration

When it rains, rainwater flows down the street gutter along the curb and into the bioretention basin. The collected stormwater is absorbed by the sandy soil on the top and stone layer on the bottom, seeping into the ground in a process called infiltration. This collected water will be absorbed by the plants' extensive root systems, cleaning the water of various pollutants from vehicles, waste, and sediment runoff as it filters into the ground.



# SHOWERS AT STONEBROOK

BIORETENTION AT THE STONEBROOK-WHITE MONTESSORI CAMPUS

## What is a Bioretention Garden?

Think of it as a sponge with plants! After it rains, a **Bioretention Garden** soaks up stormwater runoff from the parking lot, filtering out pollutants and sediment. The garden consists of special soils, stones, and plants that work together to clean the water.

After the stormwater is cleaned, it is released back into the ground. All water eventually returns to our streams and lakes. Cleaning it in the garden helps keep our water healthy!

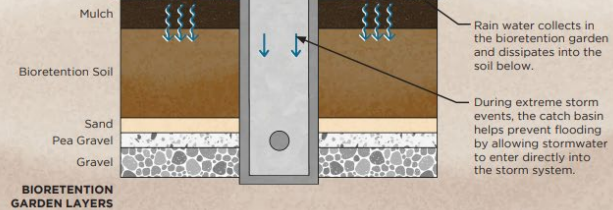
## Did You Know?

Cleveland has many historic sand ridges that are now covered by roadway and parking lot pavement. This pavement blocks rainwater and stormwater from soaking into the ground.

Northeast Ohio  
Regional Sewer District



This garden also removes stormwater from combined sewer systems. Why is this important? When it rains, these systems can become overloaded, causing flooding and even releasing dirty water in the environment. Yuck!



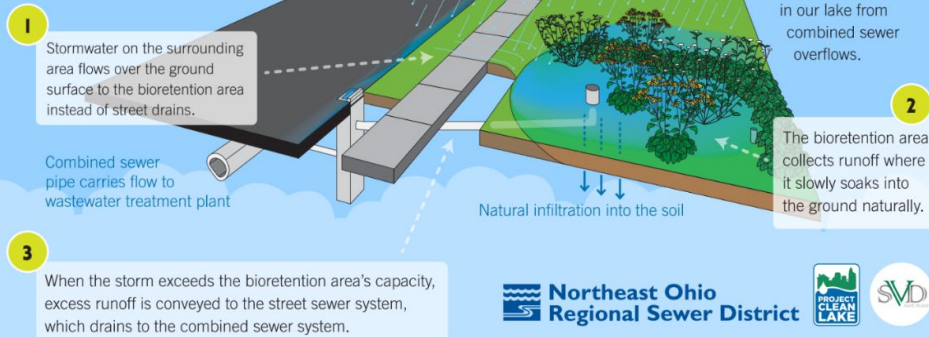


Northeast Ohio Regional Sewer District **GREEN AMBASSADOR PROJECTS ACROSS THE REGION**

# Keeping our Great Lake great

## How a landscape helps protect Lake Erie water quality

When rain hits hard surfaces like roadways, it flows to the lowest point and carries pollution with it to sewers and nearby streams. The greenspace you see here (and the sewers you don't) now work together to keep stormwater out of the sewer system and pollution out of our environment. Here's how the system works:



### FASTFACTS

What is Green Infrastructure?

Green infrastructure projects control stormwater before it enters the combined sewer system. This means less pollution in our lake from combined sewer overflows.

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Regional Sewer District**



## THE PROJECT

Across our region, pavement has replaced the natural green spaces that once slowed the pace of stormwater runoff from precipitation. As stormwater flows over the ground, it picks up debris, chemicals, and pollutants that can contaminate our waterways.

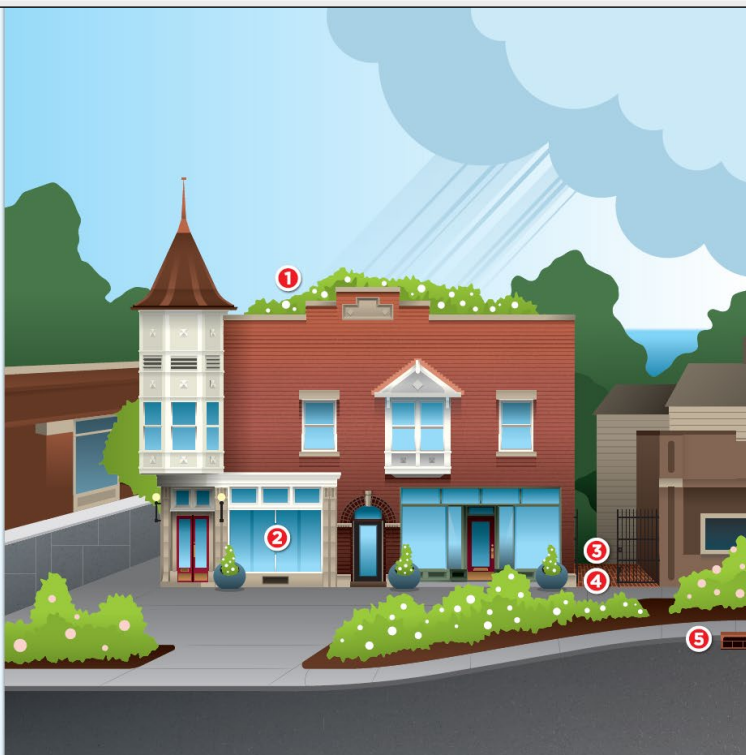
With support from Northeast Ohio Regional Sewer District, Waterloo Arts installed stormwater management solutions to mitigate runoff from their property. The Green Roof & Alley Renovation project diverts approximately 107,000 gallons of water from the sewer annually, contributing to a better regional ecosystem.

Phase I includes a green roof, rainwater harvesting, permeable pavers, and an interior plant wall. In addition, skylights and windows were restored during the renovation which created a healthier building by enhancing natural light and ventilation.

Phase II will include an easily accessible green roof of native flowers and grasses and an expanded rainwater harvest system.



**Northeast  
Ohio Regional  
Sewer District**



### 1 GREEN ROOF

The upper roof is covered with 2000 of sedum plant trays. Green roofs provide an abundance of benefits including stormwater retention, a pollinator habitat, reduced urban heat island effect, insulation that reduces energy usage and increases the lifespan of the roof.

### 2 PLANT WALL

A cell fit interior living wall provides visitors with a view of thriving plant life and is irrigated with rainwater harvested from the roof. Interior spaces that facilitate a connection to nature increase health and well-being.

### 3 PERMEABLE PAVERS

Permeable pavers allow water to infiltrate in place, reducing runoff, naturally filtering out pollutants, and replenishing groundwater. This process contributes to cleaner waterways while hydrating urban plant life and cooling surface temperatures, which reduces urban heat island effect.

### 4 RAINWATER HARVESTING

Rainwater not absorbed by the green roof plants is directed into a cistern which sits below the permeable pavers in the alley. The harvested water is pumped from the cistern to irrigation sites for watering outdoor gardens and the interior plant wall.

### 5 COMBINED SEWERS

Combined sewers carry sanitary sewage, stormwater, and industrial waste in a single pipe. Normally, the water flows to a wastewater treatment plant where it is cleaned before releasing it into Lake Erie. However, when heavy storms produce large volumes of surface runoff, combined sewers may not be able to handle the increase.